Graduation Citation

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Thesis Title

Structural Behaviour and Design of Cold-formed Steel Beams at Elevated Temperatures

Supervisors

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Citation

This research investigated the structural behaviour of compact cold-formed steel lipped channel beams subject to the effects of inelastic local buckling and yielding, and lateral-torsional buckling under simulated fire conditions using both finite element analyses and experiments. New design methods were proposed for these cold-formed steel beams subject to lateral-torsional buckling both at normal and fire situations as the main outcome of this research. In general it led to significantly improved understanding and knowledge of the structural behaviour of cold-formed steel beams, and suitable recommendations regarding the accuracy of current design rules both at ambient and elevated temperatures. This research has contributed to safer designs of steel buildings under fire events.